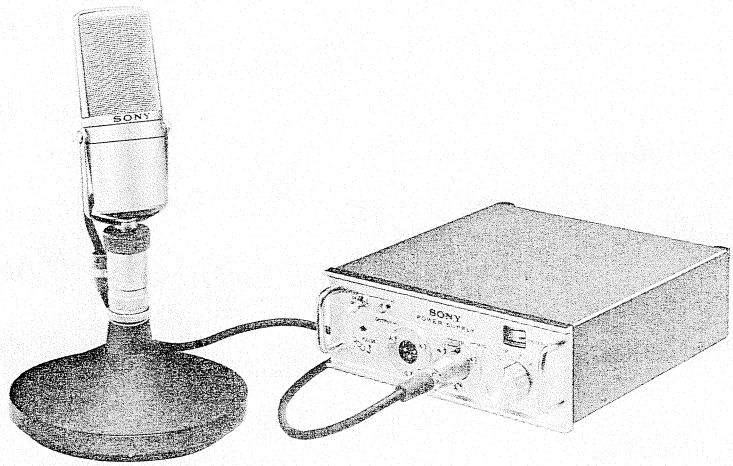
C-47

US Model
E Model



MICROPHONE POWER SUPPLY UNIT

CONDENSER MICROPHONE

SPECIFICATIONS

Type: C-47 Variable directivity condenser microphone

Power requirements: Battery operation:
Normal operating voltage: 6 V DC
Minimum operating voltage: Approx. 4.5 V DC
Current drain: Less than 40 mA

Battery life: Approx. 150 hours with Sony long-life batteries

AC operation: Power requirements 120 V AC, 60 Hz (US model)
220–240 V, 50/60 Hz (E model)
Power consumption 3 W

Directivity: Uni-directional and Omni-directional variable

Output impedance: 50 Ω ± 20 %, 1,000 Hz, balanced

Output level: Effective output level: −43 dBm
(0 dBm = 1 mW/10μbar, 1,000 Hz)
Open circuit voltage: 0.32 mV/μbar, at 1,000 Hz
Output level deviation is ± 2 dB.
Recommended load impedance is more than 3 kΩ.

Frequency response: 30 Hz – 18,000 Hz

Noise level:

S/N ratio:	More than 50 dB (1,000 Hz, 1μbar)
Inherent noise:	Less than 24 dB SPL ($0\ dB = 2 \times 10^{-4}\ \mu bar$)
Wind noise *1	Less than 45 dB SPL
Induction noise from external magnetic field *2:	Less than −20 dB SPL/m gauss

*1 Wind noise is the value measured by applying a wind velocity of 6.6 ft/second from all directions on the microphone. The mean value is obtained and converted to the equivalent input sound level. ($0\ dB = 2 \times 10^{-4}\ \mu bar$)

*2 The external magnetic field induction noise is measured with the microphone placed in an alternating magnetic field of 50 Hz, 1 m gauss. The maximum noise value is obtained and then converted to the equivalent input sound level. ($0\ dB = 2 \times 10^{-4}\ \mu bar$)

Maximum sound pressure input level: Approx. 154 dB SPL (20–20,000 Hz)

Dynamic range: Approx. 130 dB

Environmental temperatures: −4° – 140°F for storage
32° – 140°F for operation

Microphone cable: 5.8 mm (¼") dia., 4-conductor shielded cable,
10 ft with CANNON XLR-5-12C connector

Mounting thread: PF½

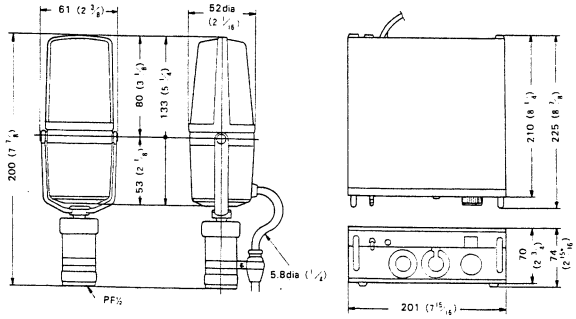
Dimensions: See page 2.

Weight:

Microphone	500 g, 1 lb 2 oz
Power supply	2600 g, 5 lb 12 oz (without batteries)
Cable	1100 g, 2 lb 7 oz (including the supplied extension cable)
Carrying case	2700 g, 6 lb

SONY®
SERVICE MANUAL

Dimensions:



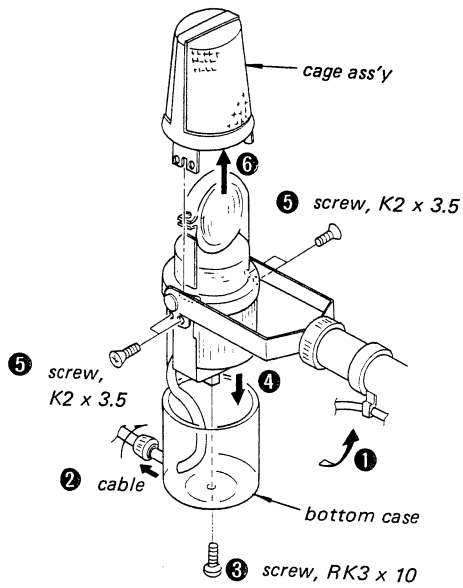
Units in mm (approximate inches in parentheses)

1. DISASSEMBLY

1-1. CAGE AND BOTTOM CASE REMOVAL

Cage Removal: Steps ❶, ❸, ❷, ❹, ❺, ❻

Bottom Case Removal: Steps ❶, ❸, ❷, ❻



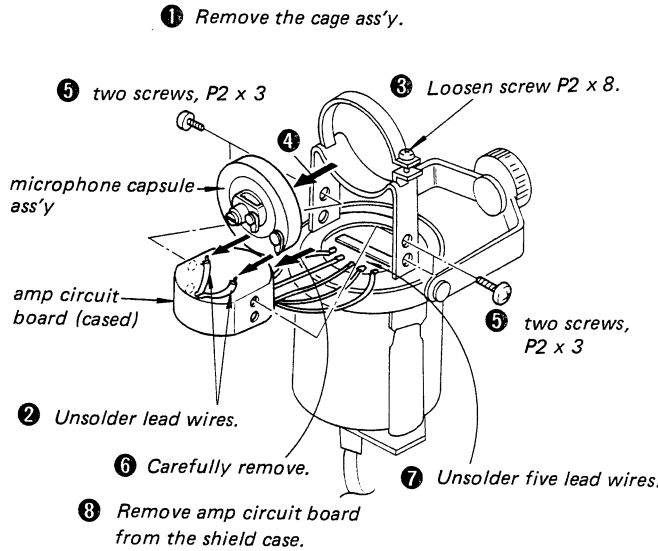
1-2. MICROPHONE CAPSULE AND AMP CIRCUIT BOARD REMOVAL

Microphone Capsule Removal:

Steps ❶, ❷, ❸, ❹

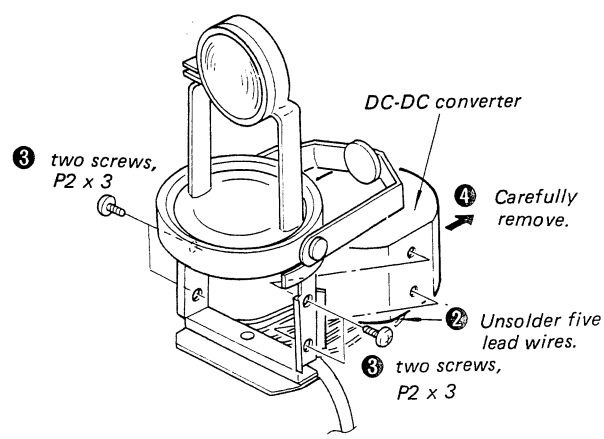
Circuit Board Removal:

Steps ❶, ❷, ❺, ❻, ❼, ❽

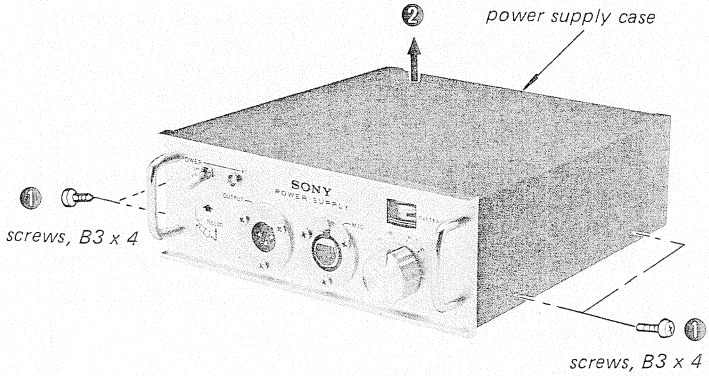

❶ Remove the cage ass'y.
❺ two screws, P2 x 3
❸ Loosen screw P2 x 8.
❹
microphone capsule ass'y
amp circuit board (cased)
❺ two screws, P2 x 3
❷ Unsolder lead wires.
❻ Carefully remove.
❼ Unsolder five lead wires.
❽ Remove amp circuit board from the shield case.

1-3. DC-DC CONVERTER REMOVAL

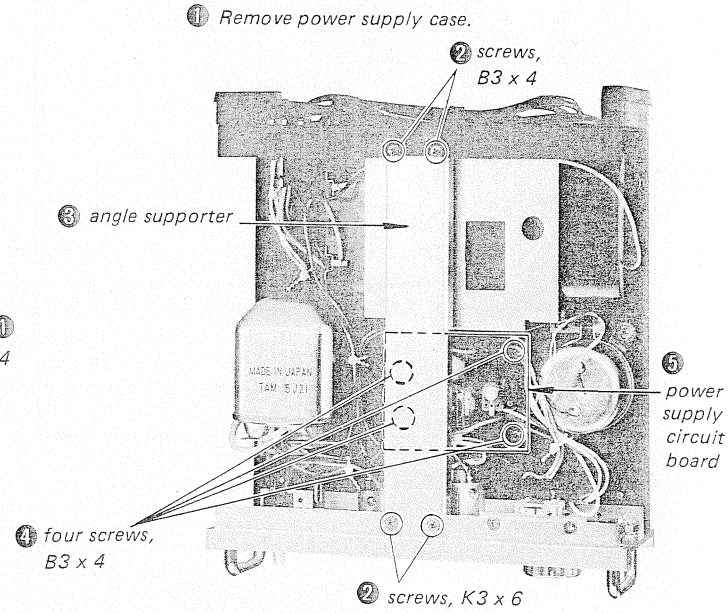
Steps: ❶, ❷, ❸, ❹



1-4. POWER SUPPLY CASE REMOVAL



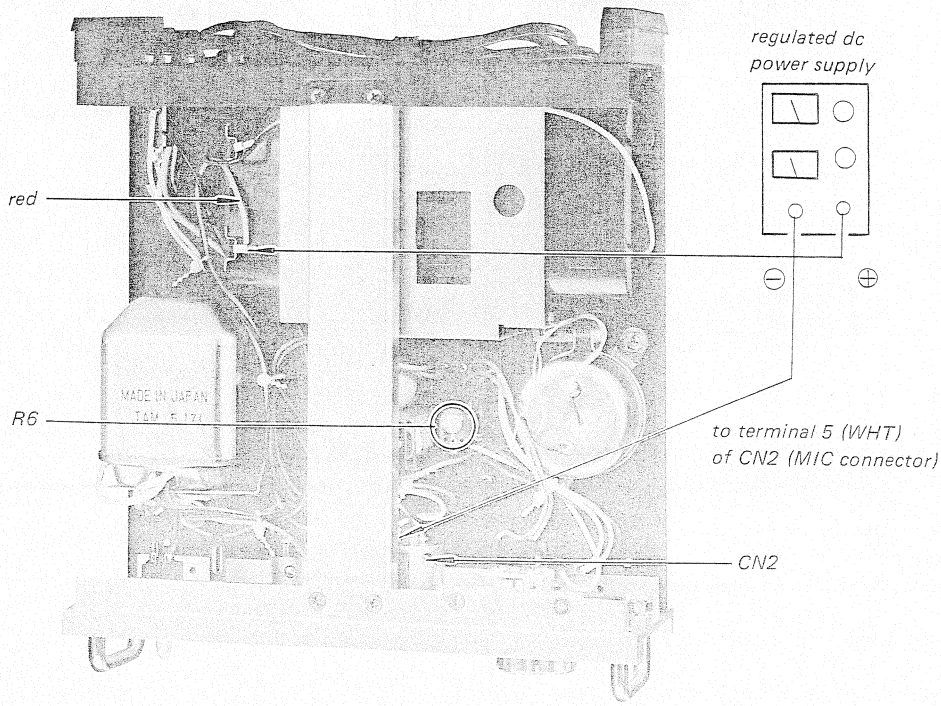
1-5. POWER SUPPLY CIRCUIT BOARD REMOVAL



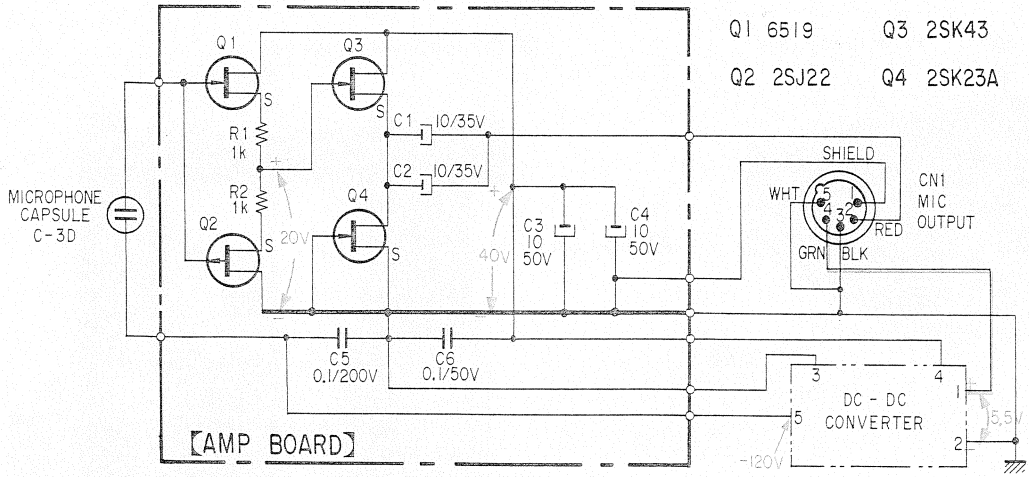
2. ADJUSTMENT

BATTERY CHECK METER CALIBRATION

1. Remove batteries from the microphone power supply.
2. Connect an external regulated dc power supply as shown below.
3. Turn the POWER switch of the microphone power supply on.
4. Set the external power supply to 4V and adjust R6 so that BATTERY check meter indicates "4".
5. Set the external power supply to 5V.
   BATTERY check meter pointer should place on the dot between "4" and "6".
6. Set the external power supply to 6V.
   BATTERY check meter pointer should place on "6".



3. SCHEMATIC DIAGRAM (AMP SECTION)

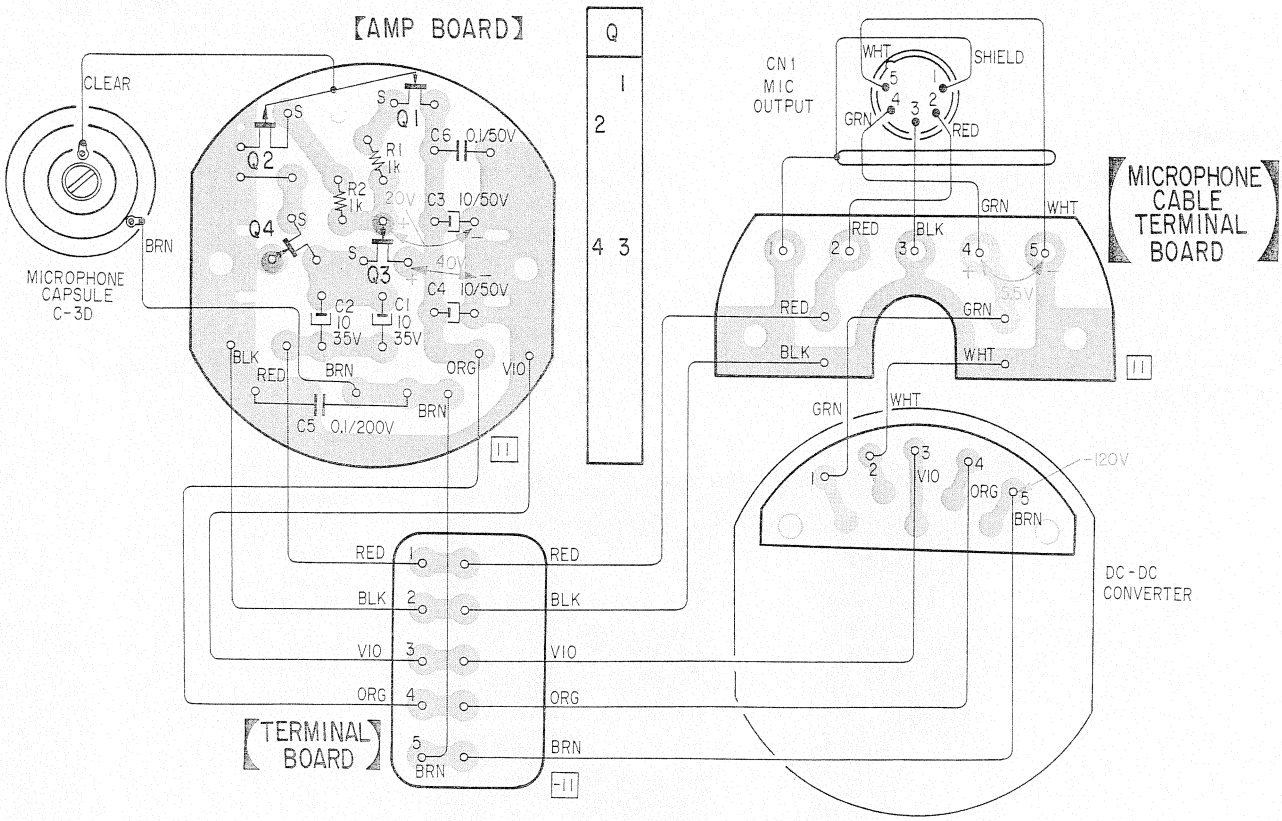


CAUTION

1. The amp mount ass'y has been carefully adjusted at the factory. If some trouble occurs on it, replace the amp mount ass'y. The parts on the amp mounted circuit board are not individually available.
2. Do not short-circuit across DC-DC convertor terminals 3 and 4, and across terminals 3 and 5.

4. MOUNTING DIAGRAM (AMP SECTION)

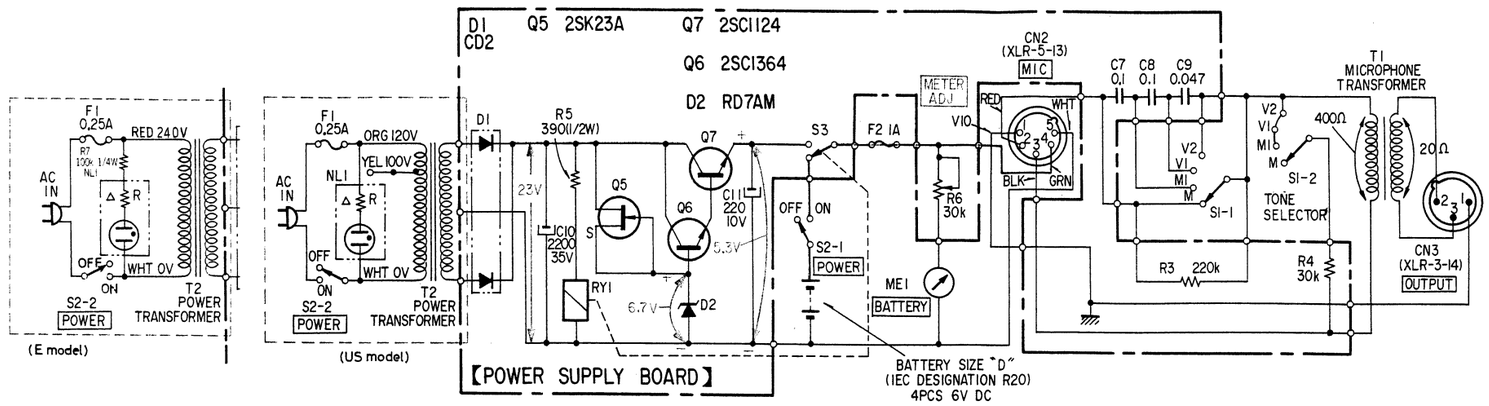
– Conductor Side –



Note:

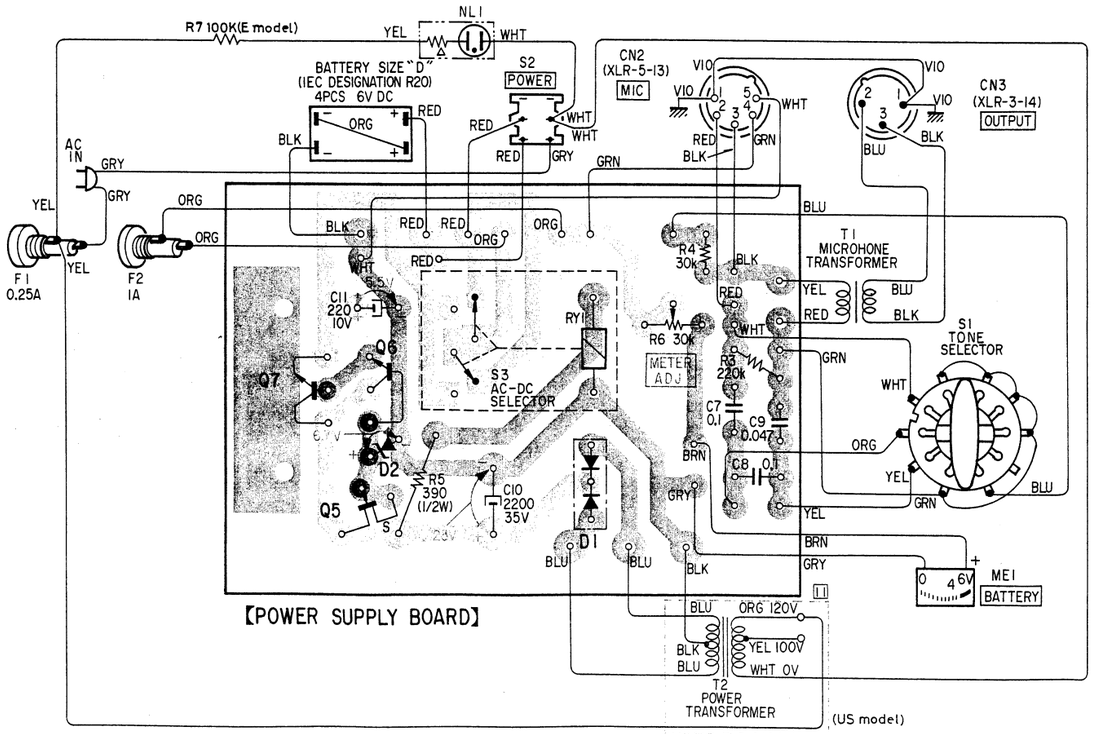
- All capacitors are in μF unless otherwise noted. pF=μμF. 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000kΩ
- ⏚ : chassis ground.
- Voltages are dc with respect to ground unless otherwise noted.
- Readings are taken under no signal conditions with a VOM (20kΩ/V).
- Voltage variations may be noted due to normal production tolerances.
- ▭ : B+bus.
- ▭ : B+pattern.

5. SCHEMATIC DIAGRAM (POWER SUPPLY SECTION)



6. MOUNTING DIAGRAM (POWER SUPPLY SECTION)

– Conductor Side –



D	2		1
Q	7	5 6	

Note:

- All capacitors are in μF unless otherwise noted. pF = μμF. 50 WV or less are not indicated except for electrolytics.
- All resistors are in ohms, ¼W unless otherwise noted. kΩ = 1000Ω, MΩ = 1000kΩ
- All variable and adjustable resistors have characteristic curve B, unless otherwise noted.
- △ : internal component.
- ▒▒ : B+ bus.
- □ : panel designation.
- ▭ : adjustment for repair.
- Voltages are dc, and are measured when plugging microphone unit into MIC input jack in ac operation condition.
- Readings are taken under no signal conditions with a VOM (20kΩ/V).
- Voltage variations may be noted due to normal production tolerances.
- ▒▒ : B+ pattern.
- DC resistance measurements are with coils connected on the circuit board, and are approximate.
- Switch

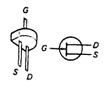
Ref. No.	Switch	Position
S1	TONE SELECTOR	M
S2	POWER	OFF
S3	AC-DC SELECTOR INCLUDED IN RELEY (RY1)	DC

Replacement Semiconductors

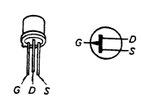
For replacement, use semiconductors except in ( ).

Amp Section

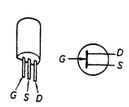
Q1: 6519



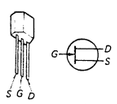
Q2: 2SJ22



Q3: 2SK43

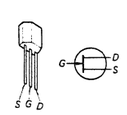


Q4: 2SK23A

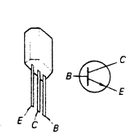


Power Supply Section

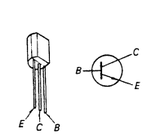
Q5: 2SK23A



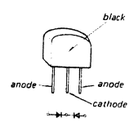
Q6: 2SC634A



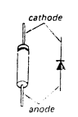
(2SC1364)



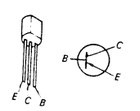
D1: CD2



D2: RD7AM

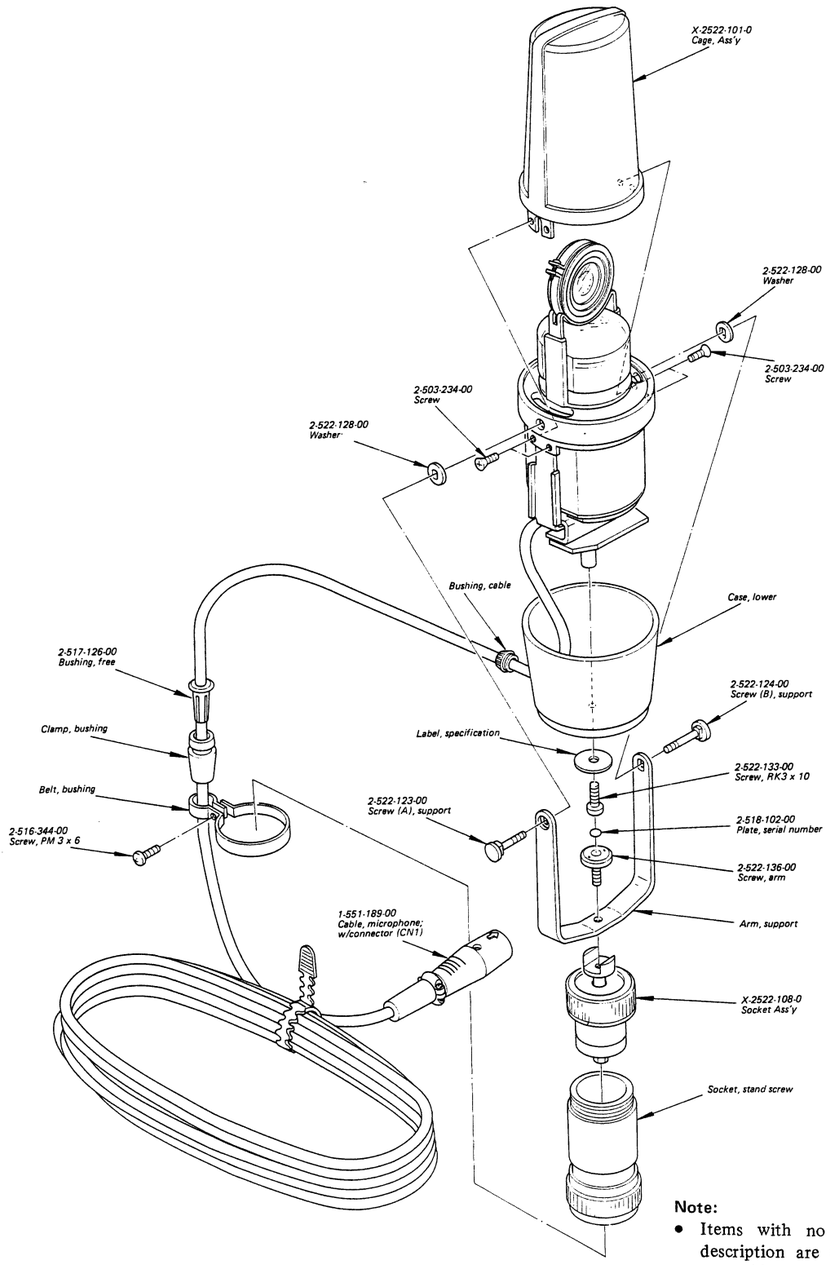


Q7: 2SC1124



7. EXPLODED VIEWS

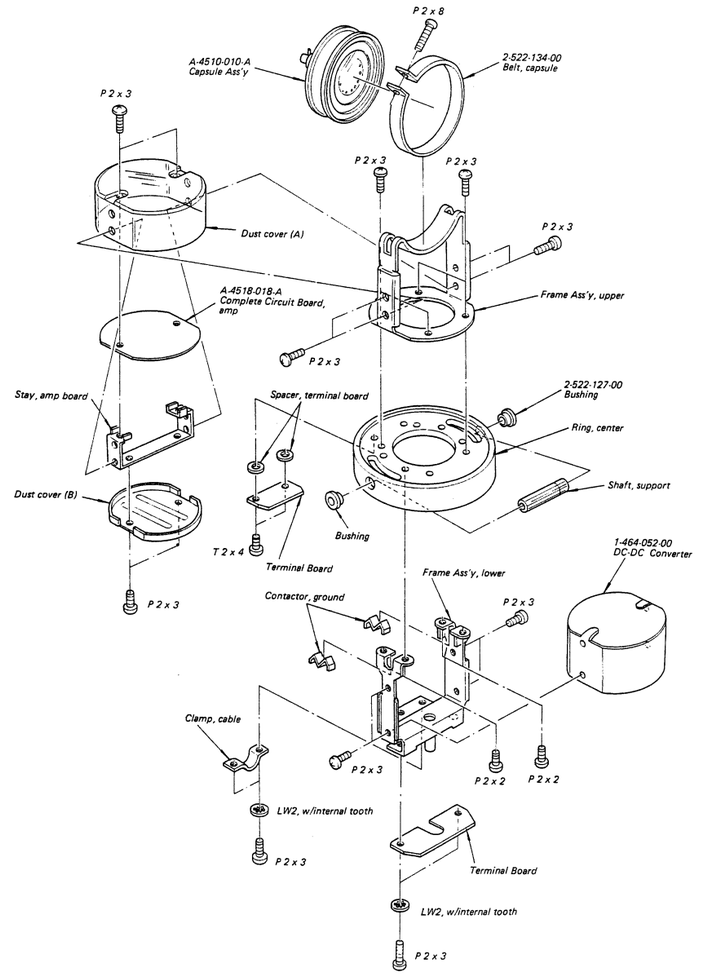
7-1.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

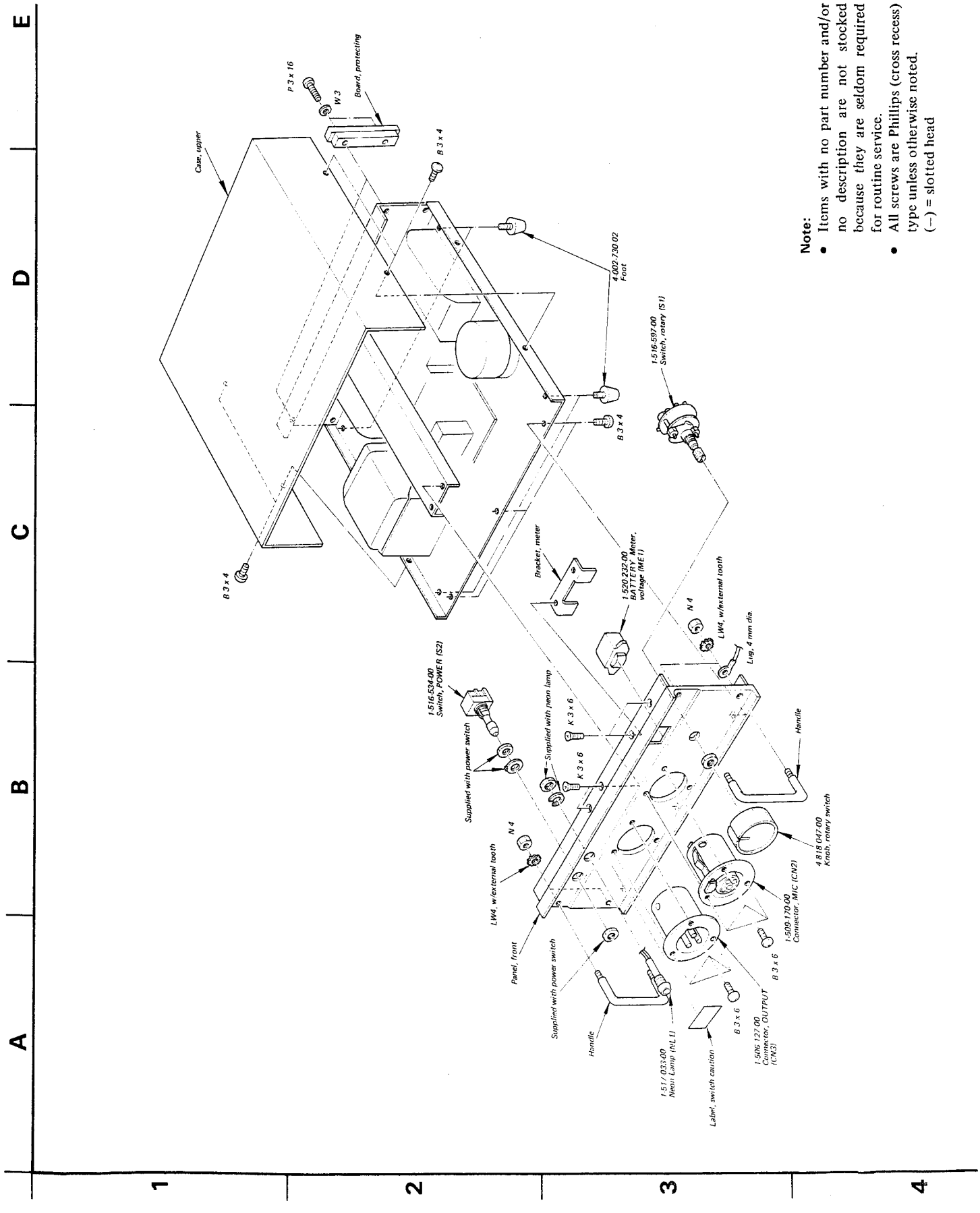
7-2.



Note:

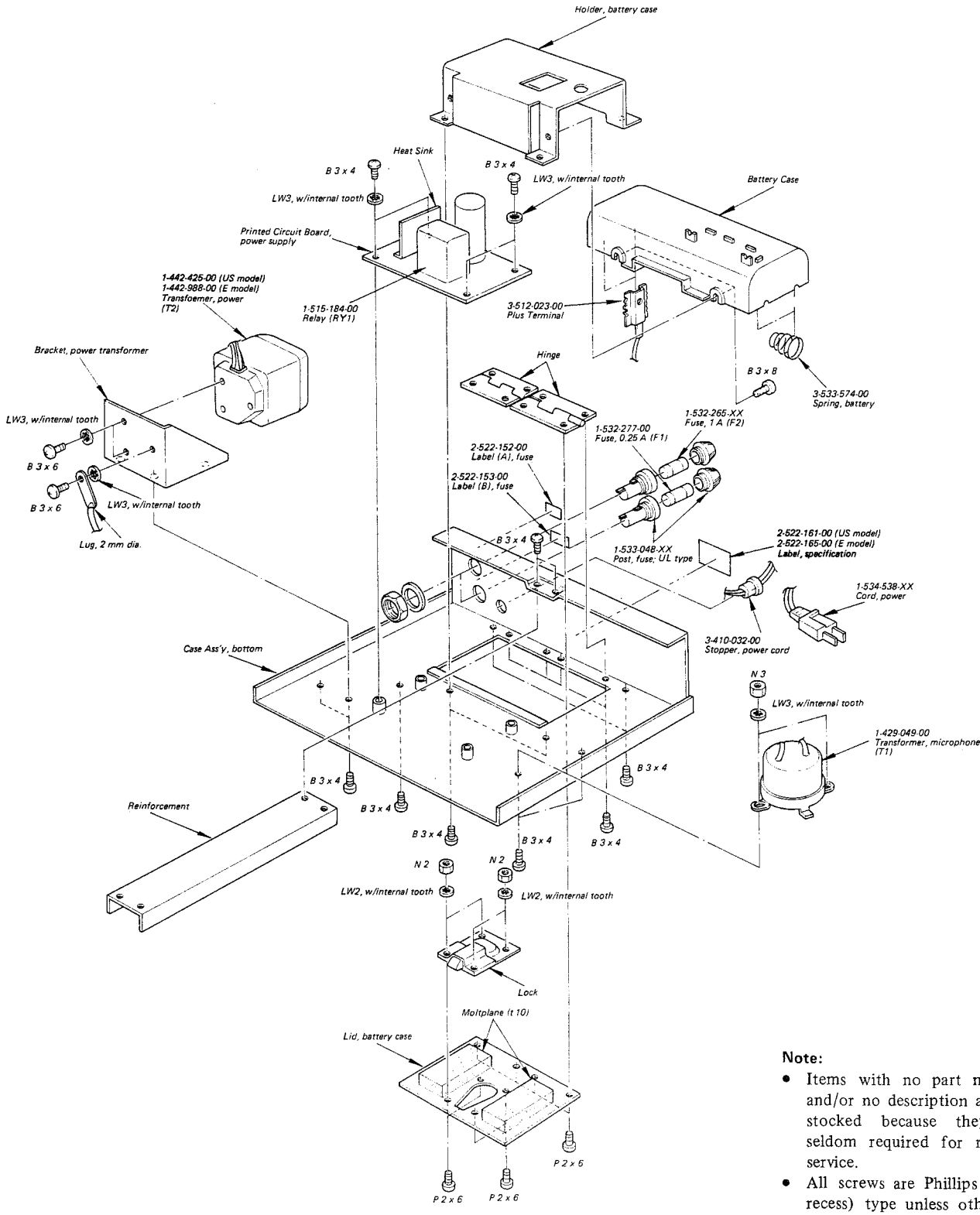
- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted.
  (–) = slotted head

7-3.



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted. (–) = slotted head



Note:

- Items with no part number and/or no description are not stocked because they are seldom required for routine service.
- All screws are Phillips (cross recess) type unless otherwise noted. (–) = slotted head (–) = slotted head

8. ELECTRICAL PARTS LIST

Ref. No.	*Part No.*	*Description*
		COMPLETE CIRCUIT BOARD
	A-4518-018-A	Amp
		SEMICONDUCTORS
		Transistors
Q5		2SK23A
⇒ Q6		2SC634A
Q7		2SC1124
		Diodes
D1		CD2
D2		RD7AM
		TRANSFORMERS
T1	1-429-049-00	Microphone
T2	1-442-425-00	Power (US model)
	1-442-988-00	Power (E model)
		CAPACITORS

All capacitors are in μF and ceramic unless otherwise noted. 50 WV or less are not indicated except for electrolytics. pF = μμF, elect = electrolytic

C7, 8	1-108-251-12	0.1		mylar
C9	1-108-246-12	0.047		mylar
C10	1-121-984-11	2200	35 V	elect
C11	1-123-072-11	220	10 V	elect

RESISTORS

All resistors are in ohms. Common ¼W carbon resistors are omitted. Check schematic diagram for values.

R5	1-213-138-11	390	½W	carbon
R6	1-224-647-XX	30 k, adjustable		

SWITCHES

S1	1-516-597-00	Rotary, TONE selector
S2	1-516-534-00	POWER

• ⇒ : Due to standardization, interchangeable replacements may be substituted for parts specified in the diagrams.

Ref. No.	*Part No.*	*Description*
		FUSES
F1	1-532-277-00	0.25 A
F2	1-532-265-XX	1 A
		MISCELLANEOUS
CN1	1-551-189-00	Cable, microphone output; w/connector
CN2	1-509-170-00	Connector (XLR-5-13), MIC
CN3	1-506-127-00	Connector (XLR-3-14), OUTPUT
ME1	1-520-232-00	BATTERY Meter, voltage
NL1	1-517-033-00	Neon Lamp
RY1	1-515-184-00	Relay
	1-464-052-00	DC-DC Converter
	1-533-048-XX	Post, fuse; UL type
	1-534-538-XX	Cord, power

ACCESSORIES & PACKING MATERIALS

Part No.	*Description*
0-110-572-04	Screwdriver
1-532-265-XX	Fuse, 1A
1-532-277-00	Fuse, 0.25A
1-551-190-00	Cable, microphone; extension
2-052-522-02	Adaptor, screw
2-599-059-21	Manual, instruction (US model)
2-599-059-11	Manual, instruction (E model)
2-522-159-00	Carton
2-522-160-00	Cushion
3-701-613-00	Bag, plastic
3-701-628-00	Bag, plastic
3-701-632-00	Bag, plastic
X-2522-107-0	Case, carrying